

**REMARKS**

Claims 1 and 3 are pending in this application. By this Amendment, claims 1 and 3 are amended, and claims 2 and 4 are canceled without prejudice to or disclaimer of the subject matter set forth therein. Support for the amendments to claims 1 and 3 can be found in the specification as originally filed, for example, at page 5, lines 5-8; at page 1, line 24 - page 2, line 6; and at page 5, lines 18-20; and in original claims 1-3. No new matter is added by these amendments.

Applicant appreciates the courtesies shown to Applicant's representative, Julie (Seaman) Lake, by Examiner Rosasco in the January 10 personal interview. As agreed during the personal interview, the outstanding rejections will be withdrawn in view of the amendments and Remarks set forth herein. Applicant's separate record of the substance of the interview is incorporated into the following remarks.

**I. Information Disclosure Statement**

An Information Disclosure Statement (IDS) with Form PTO-1449 was filed in the above-captioned patent application on December 1, 2003. Applicants have not yet received from the Examiner a copy of the Form PTO-1449 initialed to acknowledge the fact that the Examiner has considered all of the disclosed information. Rather, the Office Action indicates that the four foreign references cited on the December 1, 2003 Form PTO-1449 have not been considered, because the references and English-language abstracts were not included in the Patent Office file. However, these Japanese-language references and their English-language abstracts are available on Public PAIR as part of the Image File Wrapper of this application. Accordingly, the Examiner is requested to initial and return to the undersigned a copy of the Form PTO-1449. For the convenience of the Examiner, a copy of that form is attached.

**II. Rejection Under 35 U.S.C. §102**

The Office Action rejects claims 1-4 under 35 U.S.C. §102(e) over U.S. Patent No. 6,548,129 to Matsukura et al. Applicant respectfully traverses this rejection with respect to claims 1 and 3, claims 2 and 4 having been canceled herein.

Independent claim 1 sets forth, in pertinent part, a "pellicle for lithography which has at least, a pellicle film for dustproof protection, a pellicle frame to which the pellicle film is adhered, ... wherein the pellicle film is formed by a die coating machine, an area of the pellicle film is 1000 cm<sup>2</sup> or more, and a distribution of a thickness of the film in plane is within  $\pm 10$  %." Claim 3 depends from claim 1 and incorporates all of the limitations thereof.

Matsukura discloses pellicles for photolithography that comprise, in either a pellicle membrane or an adhesive, a particular type of fluorine-containing polymer. *See* Matsukura, Abstract. The Matsukura pellicles are produced by forming a thin polymer membrane by coating methods that include die coating, on a substrate to a thickness of from 0.01 to 50  $\mu$ m. *See* Matsukura, col. 9, lines 41-47. Matsukura discloses that spin coating is preferred because pellicle membranes require strict control of membrane thickness. *See* Matsukura, col. 9, lines 47-50. Based on these disclosures, the Office Action takes the position that claim 1 and its dependent claim 3 are anticipated by Matsukura. Matsukura does not disclose, however, a pellicle for lithography meeting all of the features set forth in independent claim 1.

Claim 1 requires that the pellicle film have an area of 1000 cm<sup>2</sup> or more. Matsukura does not disclose pellicle films of such sizes. *See generally* Matsukura. In fact, there are no disclosed areas for the Matsukura pellicle films. *Id.* Thus, Matsukura does not disclose, in discrete embodiments, pellicles for lithography "wherein an area of the pellicle film is 1000 cm<sup>2</sup> or more," as required by claim 1.

In addition, claim 1 requires that the pellicle film be formed by a die coating machine and a "distribution of a thickness of the film in plane is within  $\pm 10$  %." That is, the pellicle

films of claim 1 must be produced by die coating and have thickness variations of  $\pm 10\%$ . However, Matsukura does not teach pellicles having pellicle films meeting these requirements. Matsukura teaches that its pellicle films may be produced by die coating and that its films have a thickness from 0.01 to 50  $\mu\text{m}$ . *See* Matsukura, col. 9, lines 41-47.

However, Matsukura does not teach control of the thickness of its films to within  $\pm 10\%$ . *See generally* Matsukura. Rather, Matsukura teaches that spin coating, not die coating, can be used to achieve "extremely strict membrane thickness control," and does not provide any further guidelines for controlling film thickness or acceptable ranges of thickness within its films. *Id.* Thus, Matsukura does not disclose, in discrete embodiments, pellicles for lithography "wherein the pellicle film is formed by a die coating machine, ... and a distribution of a thickness of the film in plane is within  $\pm 10\%$ ," as required by claim 1.

Because Matsukura does not teach pellicles for lithography "wherein the pellicle film is formed by a die coating machine, an area of the pellicle film is 1000  $\text{cm}^2$  or more, and a distribution of a thickness of the film in plane is within  $\pm 10\%$ ," as set forth in claim 1, independent claim 1 and its dependent claim 3 are patentable over Matsukura. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

### **III. Rejection Under 35 U.S.C. §103**

The Office Action rejects claims 1-4 under 35 U.S.C. §103(a) over U.S. Patent No. 6,548,129 to Matsukura et al. in view of U.S. Patent No. 6,593,034 to Shirasaki. Applicant respectfully traverses this rejection with respect to claims 1 and 3, claims 2 and 4 having been canceled herein.

Claim 1 is as set forth above. Claim 3 depends from and incorporates all of the limitations of claim 1.

As discussed above, Matsukura does not teach, and does not suggest, all of the limitations of independent claim 1. Specifically, Matsukura does not teach or suggest a

pellicle for lithography "wherein the pellicle film is formed by a die coating machine, an area of the pellicle film is  $1000 \text{ cm}^2$  or more, and a distribution of a thickness of the film in plane is within  $\pm 10 \%$ ," as set forth in claim 1. Thus, Matsukura alone cannot support a rejection of claim 1 and its dependent claim 3.

The Office Action relies on Shirasaki as teaching framed pellicles mounted by pressure sensitive adhesive on a photomask, and as teaching that pellicles are used in the manufacturing of liquid crystal displays. However, combining Matsukura with Shirasaki does not remedy the shortcomings of Matsukura.

Shirasaki, like Matsukura, teaches framed pellicles for photolithography. *See* Shirasaki, col. 1, lines 8-13. However, Shirasaki, like Matsukura, does not teach pellicles in which an "area of the pellicle film is  $1000 \text{ cm}^2$  or more," as set forth in claim 1. *See generally* Shirasaki. At most, Shirasaki discloses an example in which the pellicle frame has interior dimensions of 149 mm by 122 mm, which corresponds to an area of about  $182 \text{ cm}^2$ . *See* Shirasaki, col. 5, lines 14-16. Shirasaki does not suggest any additional dimensions or areas, and in particular does not suggest any areas larger than  $1000 \text{ cm}^2$ , that could correspond to its pellicle films. *See generally* Shirasaki. Thus, Shirasaki, like Matsukura, does not disclose or suggest pellicles for lithography "wherein an area of the pellicle film is  $1000 \text{ cm}^2$  or more," as required by claim 1.

In addition, Shirasaki does not teach, and does not suggest, pellicles in which a pellicle film is formed by a die coating machine and a "distribution of a thickness of the film in plane is within  $\pm 10 \%$ ," as required by independent claim 1. *See generally* Shirasaki. Instead, Shirasaki includes no specific teachings relating to the formation methods used to produce its pellicle films, and no teachings with respect to the thickness, and variation in thickness, of its films. *See generally* Shirasaki. Thus, Shirasaki, like Matsukura, does not disclose or suggest pellicles for lithography "wherein the pellicle film is formed by a die

coating machine, ... and a distribution of a thickness of the film in plane is within  $\pm 10\%$ ," as required by claim 1.

In addition, these features that "the pellicle film is formed by a die coating machine, an area of the pellicle film is  $1000\text{ cm}^2$  or more, and a distribution of a thickness of the film in plane is within  $\pm 10\%$ ," set forth in claim 1 and not taught by either Matsukura or Shirasaki, allow the pellicles according to the claims to achieve benefits not contemplated by Matsukura or Shirasaki. In particular, the claimed pellicles can achieve superior light transmission and more even film thicknesses, compared to conventional pellicle films formed by, for example, spin coating, the preferred method of Matsukura. *See* Specification, page 4, line 22 - page 5, line 4; Matsukura, col. 9, lines 47-50. This allows lithographic patterns on large-sized substrates to be formed with suitable accuracy, a previously unobtainable result. *See* Specification, page 3, line 12 - page 5, line 28.

Applicant respectfully submits that claims 1 and 3 are patentable over Matsukura in view of Shirasaki, at least because neither reference discloses or suggests pellicles for lithography "wherein the pellicle film is formed by a die coating machine, an area of the pellicle film is  $1000\text{ cm}^2$  or more, and a distribution of a thickness of the film in plane is  $\pm 10\%$ ," as set forth in independent claim 1, or the advantages thereof. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

#### **IV. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1 and 3 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



William P. Berridge  
Registration No. 30,024

Julie M. Seaman  
Registration No. 51,156

WPB:JMS/ccs

Attachment:  
Form PTO-1449

Date: January 11, 2006

**OLIFF & BERRIDGE, PLC**  
**P.O. Box 19928**  
**Alexandria, Virginia 22320**  
**Telephone: (703) 836-6400**

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